

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

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24 JUL 2008

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MS DATE: / /

REGISTERED LETTER

INVITATION TO PAY ADDITIONAL FEES
AND, WHERE APPLICABLE, PROTEST FEE
(PCT Article 17(3)(a) and Rule 40.1 and 40.2(e))

Date of mailing
(day/month/year) 08/07/2008

Applicant's or agent's file reference

P88684PC00

PAYMENT DUE

within **ONE MONTH** from
the above date of mailing

International application No.

PCT/EP2008/001578

International filing date

(day/month/year) 28/02/2008

Applicant

POTONATION VISION LIMITED

1. This International Searching Authority

- (i) considers that there are 2 (number of) inventions claimed in the international application covered by the claims indicated on an extra sheet:
- (ii) therefore considers that **the international application does not comply with the requirements of unity of invention** (Rules 13.1, 13.2 and 13.3) for the reasons indicated on an extra sheet:
- (iii) ☒ has carried out a partial international search (see Annex) ☐ will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos. **see extra sheet**
- (iv) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid.

2. Consequently, the applicant is hereby invited to pay, within the time limit indicated above, the amount indicated below:

EUR 1.700,00 x 1 = EUR 1.700
Fee per additional invention number of additional inventions currency/total amount of additional fees

3. The applicant is informed that, according to Rule 40.2(c), the payment of any additional fee may be made under protest, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive, where applicable, subject to the payment of a protest fee.

Where the applicant pays additional fees under protest, the applicant is hereby invited, within the time limit indicated above, to pay a protest fee (Rule 40.2(e)) in the amount of EUR 750,00 (currency/amount)

Where the applicant has not, within the time limit indicated above, paid the required protest fee, the protest will be considered not to have been made and the International Searching Authority will so declare.

4. ☒ Claim(s) No. see extra sheet have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority



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Authorized officer

Brigitte Chiarizia

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,2,4-10,18

Method for correcting non-uniform face illumination;
acquisition device provided with said functionality (claim
18)

2. claims: 11-17

Method for face region detection based on a cascade of
classifiers

The two sets of claims have in common the fact they recite features relating to classifiers trained for different illumination conditions, see claim 1, feature (b) - "uneven illumination classifier" and claim 13 - "uneven illumination classification cascades". However, the independent claims 1 and 11 refer to distinct image processing operations which can be applied independently of each other (therefore "a priori" non-unity considerations apply).

The document D1:Mitra anticipates the subject-matter of claims 1, 2, 5 and 6 (see Section 3. "Human Identification: GMM based on Phase" and Section 4.1. "Application to Illumination Normalization"). Classification with reject option (claim 4) pertains to the common general knowledge. The special technical feature has been identified in claim 7 and refers to the illumination correction applied on a series of images. The problem solved by this feature relates therefore to propagation of an image processing operation to an image set.

Claims 11-17 address the problem of face detection. The special technical feature seems to be recited in claim 11, feature (c) - "shortened face detection classifier cascades", which implies seeking to improve the speed of the face detection process.

No common inventive concept can therefore be identified by means of either a common inventive feature or a non-obvious solution to a technical problem. Consequently, the application does not comply with the requirement of unity of the invention, Rule 13 PCT.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 206

Continuation of Box 3.

Claims Nos.: 3

It cannot be understood what is meant by the "simultaneous" in connection with "detection" since claim 1 does not clearly recite a step of detection.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2)PCT declaration be overcome.

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
- see 'Invitation to pay additional fees'
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	MITRA S ET AL: "Gaussian Mixture Models Based on the Frequency Spectra for Human Identification and Illumination Classification" AUTOMATIC IDENTIFICATION ADVANCED TECHNOLOGIES, 2005. FOURTH IEEE WORK SHOP ON BUFFALO, NY, USA 17-18 OCT. 2005, PISCATAWAY, NJ, USA, IEEE, 17 October 2005 (2005-10-17), pages 245-250, XP010856528 ISBN: 978-0-7695-2475-7 Section 3. "Human identification: GMM based on phase", Section 4. "Illumination classification: GMM based on magnitude", in particular Section 4.1. "Application to illumination normalization"	1,2,5,6, 8,9,18
X	KOUZANI A Z: "Illumination-effects compensation in facial images" SYSTEMS, MAN, AND CYBERNETICS, 1999. IEEE SMC '99 CONFERENCE PROCEEDINGS. 1999 IEEE INTERNATIONAL CONFERENCE ON TOKYO, JAPAN 12-15 OCT. 1999, PISCATAWAY, NJ, USA, IEEE, US, vol. 6, 12 October 1999 (1999-10-12), pages 840-844, XP010363112 ISBN: 978-0-7803-5731-0 Section II. "Proposed illumination-effects compensation method", in particular p. VI-842, Algorithm 1: Training, Synthesis	1,18

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☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"Z" document member of the same patent family

Annex to Form PCT/ISA/206
COMMUNICATION RELATING TO THE RESULTS
OF THE PARTIAL INTERNATIONAL SEARCH

International Application No.

PCT/EP2008/001578

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SORIANO M ET AL: "Making saturated facial images useful again" PROCEEDINGS OF THE SPIE, SPIE, BELLINGHAM, VA, vol. 3826, 17 June 1999 (1999-06-17), pages 113-121, XP002325961 ISSN: 0277-786X the whole document, in particular Section 2.2. "Color correction by RGB eigenfaces" -----	1,5,18
A	SIM T ET AL: "The CMU Pose, Illumination, and Expression (PIE) database" AUTOMATIC FACE AND GESTURE RECOGNITION, 2002. PROCEEDINGS. FIFTH IEEE INTERNATIONAL CONFERENCE ON, IEEE, PISCATAWAY, NJ, USA, 20 May 2002 (2002-05-20), pages 53-58, XP010949335 ISBN: 978-0-7695-1602-8 the whole document -----	1-10